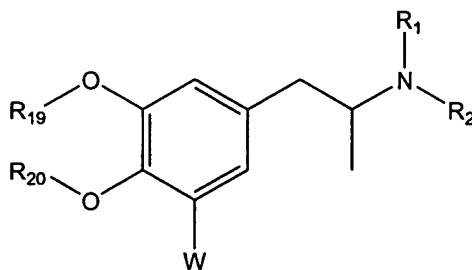


Specification Amendments

Please amend the specification as follows:

On page 3, please amend the paragraphs at page 3, line 2, to page 5, line 2, as follows:

One embodiment of the present invention is a compound of the formula:



Formula I

wherein: R¹⁹ is lower alkyl or is taken together with R²⁰ to form a ring, which may be a five- or six-member ring;

R²⁰ is lower alkyl, or is taken together with R¹⁹ to form a ring as discussed above,

R¹ is H or lower alkyl,

R² is H, lower alkyl, a protecting group or

- (a) $-(CH_2)_aC(O)(CH_2)_bSR^3$, wherein a is 0 to 5, b is 1 to 5 and R³ is H or lower alkyl or $(CH_2)_cC(O)NR^4R^5$ wherein c is 1 to 5, R⁴ is H or lower alkyl and R⁵ is H, an immunogenic carrier or a label, or
- (b) $(A)_d(Q)_n$ wherein Q is H or $-(CH_2)_eCH(R^8)(CH_2)_fOC(O)(CH_2)_gR^9$ being H only when d is 1 wherein A is $-C(O)(CH_2)_hC(O)NR^{10}((CH_2)_jO(CH_2)_kO)_m(CH_2)_2NR^{11}-$, d is 0 or 1, n is 0 or 1 wherein one of d or n is 1, h is 1 to 5, R¹⁰ is H or lower alkyl, j is 1 to 5, k is 1 to 5, m is 1 to 3, R¹¹ is H or lower alkyl, e is 1 to 5, R⁸ is OH or H, f is 1 to 5, g is 0 to 5, and R⁹ is H, an immunogenic carrier or a label;

W is H or JR¹⁴ being H when R² is other than H or lower alkyl, wherein

J is O or S,

R¹⁴ is H, lower alkyl, a protecting group, or

$-(CH_2)_rC(O)NR^{15}(CH_2)_s(D)_tR^{16}$, wherein r is 1 to 5, R^{15} is H or lower alkyl, s is 1 to 5, D is S, O, or NH , t is 0 or 1 being 0 when R^{16} is maleimidyl or succinimidyl, R^{16} is H, maleimidyl, succinimidyl, or $-(CH_2)_qC(O)NR^{17}R^{18}$,

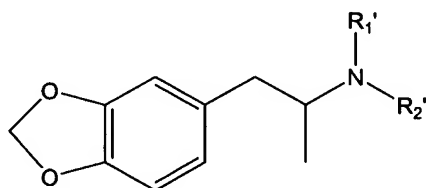
q is 1 to 5,

R^{17} is H or lower alkyl,

R^{18} is H, lower alkyl, an immunogenic carrier or label,

and including the acid salts thereof.

Another embodiment of the present invention is a compound of the formula:



Formula II

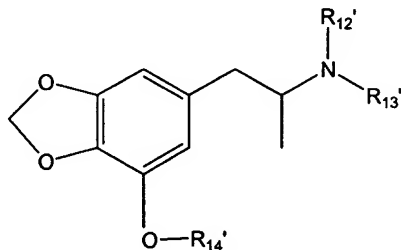
wherein: $R^{1'}$ is H, lower alkyl or a protecting group,

$R^{2'}$ is a protecting group, or

- (a) $-(CH_2)_aC(O)(CH_2)_bSR^{3'}$, wherein a is 0 to 5, b is 1 to 5 and $R^{3'}$ is H or lower alkyl or $(CH_2)_cC(O)NR^{4'}R^{5'}$ wherein c is 1 to 5, $R^{4'}$ is H or lower alkyl and $R^{5'}$ is H, an immunogenic carrier or a label, or
- (b) $(A)_d(Q)_n$ wherein Q is H or $-(CH_2)_eCH(R^{8'})(CH_2)_fOC(O)(CH_2)_gR^{9'}$ being H only when d is 1 wherein A is $-C(O)(CH_2)_hC(O)N(R^{10})((CH_2)_jO(CH_2)_kO)_m(CH)_pNR^{11}-$, d is 0 or 1, n is 0 or 1 wherein one of d or n is 1, h is 1 to 5, R^{10} is H or lower alkyl, j is 1 to 5, k is 1 to 5, m is 1 to 3, R^{11} is H or lower alkyl, e is 1 to 5, $R^{8'}$ is OH or H, f is 1 to 5, g is 0 to 5, and $R^{9'}$ is H, an immunogenic carrier or a label,

and including the acid salts thereof.

Another embodiment of the present invention is a compound of the formula:

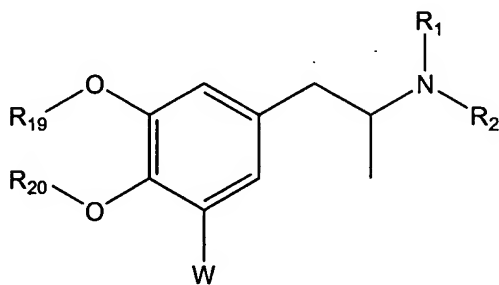


Formula III

wherein: R^{12} , is H or lower alkyl,
 R^{13} , is H or lower alkyl,
 R^{14} , is a protecting group, or $-(CH_2)_rC(O)NR^{15}(CH_2)_s(D)_tR^{16}$, wherein r is 1 to 5,
 R^{15} , is H or lower alkyl, s is 1 to 5, D is S, O, or NH , t is 0 or 1 being 0 when R^{16} , is
maleimidyl or succinimidyl, R^{16} , is H, a protecting group, maleimidyl or succinimidyl, or
 $-(CH_2)_qC(O)NR^{17}R^{18}$, wherein q is 1 to 5,
 R^{17} , is H, lower alkyl or a protecting group,
 R^{18} , is H, lower alkyl, a protecting group, an immunogenic carrier or label,
and including the acid salts thereof.

Please amend the paragraph at page 8, line 3, to page 9, line 8, as follows:

As mentioned above, compounds include compounds of the formula:



Formula I

wherein: R^{19} is lower alkyl or is taken together with R^{20} to form a ring, which may be a five- or six-member ring, usually a five-member ring;
 R^{20} is lower alkyl, or is taken together with R^{19} to form a ring as discussed above,
 R^1 , is H or lower alkyl,
 R^2 is H, lower alkyl, a protecting group or
(a) $-(CH_2)_aC(O)(CH_2)_bSR^3$, wherein a is 0 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, b is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, and R^3 is H or lower alkyl or $(CH_2)_cC(O)NR^4R^5$ wherein c is 1 to 5, R^4 is H or lower alkyl and R^5 is H, an immunogenic carrier or a label, or
(b) $(A)_d(Q)_n$ wherein Q is H or $-(CH_2)_eCH(R^8)(CH_2)_fOC(O)(CH_2)_gR^9$ being H only when d is 1 wherein A is $-C(O)(CH_2)_hC(O)NR^{10}((CH_2)_jO(CH_2)_kO)_m(CH_2)_2NR^{11}-$, d is 0 or 1, n is 0 or 1

wherein one of d or n is 1, h is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, R^{10} is H or lower alkyl, j is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, k is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, m is 1 to 3, 1 to 2, R^{11} is H or lower alkyl, e is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, R^8 is OH or H, f is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, g is 0 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, and R^9 is H, an immunogenic carrier or a label;

W is H or JR^{14} being H when R^2 is other than H or lower alkyl, wherein

J is O or S,

R^{14} is H, lower alkyl, a protecting group, or

$-(CH_2)_rC(O)NR^{15}(CH_2)_s(D)_tR^{16}$, wherein r is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, R^{15} is H or lower alkyl, s is 1 to 5, 1 to 4, 1 to 3, 2 to 4, 1 to 2, D is S, O or NH , t is 0 or 1 being 0 when R^{16} is maleimidyl or succinimidyl, R^{16} is H, maleimidyl, succinimidyl, or

$-(CH_2)_qC(O)NR^{17}R^{18}$, wherein q is 1 to 5,

~~q is 1 to 5,~~ 1 to 4, 1 to 3, 2 to 4, 1 to 2,

R^{17} is H or lower alkyl,

R^{18} is H, lower alkyl, an immunogenic carrier or label,

and including the acid salts thereof.